

Amendments to the Claims

The claims have been amended as follows. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

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Claims 1-20 (Cancelled).

21. (Previously presented) A physical vapor deposition target consisting essentially of:

aluminum having a purity of at least 99.999 atomic percent; and

less than or equal to 1000 ppm of one or more dopant materials comprising elements selected from the group consisting of Ac, Ag, As, B, Ba, Be, Bi, C, Ca, Cd, Ce, Co, Cr, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Ho, In, Ir, La, Lu, Mg, Mn, Mo, N, Nb, Nd, Ni, O, Os, P, Pb, Pd, Pm, Po, Pr, Pt, Pu, Ra, Rf, Rh, Ru, S, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Te, Ti, Tl, Tm, V, W, Y, Yb, Zn and Zr; the physical vapor deposition target having an average grain size of less than 100 microns.

22. (Original) The physical vapor deposition target of claim 21 having an average grain size of less than or equal to 45 microns.

23. (Original) The physical vapor deposition target of claim 21 consisting of Al and less than 100 ppm of one or more of Si, Sc, Ti and Hf.

24. (Original) The physical vapor deposition target of claim 21 consisting of Al and from 10 ppm to 100 ppm of one or more of Si, Sc, Ti and Hf.

25. (Original) The physical vapor deposition target of claim 21 consisting of Al and from 10 ppm to 100 ppm of Sc; the target having an average grain size of less than or equal to 45 microns.

26. (Original) The physical vapor deposition target of claim 21 consisting of Al and from 10 ppm to 100 ppm of Si; the target having an average grain size of less than or equal to 35 microns.

27. (Original) The physical vapor deposition target of claim 21 consisting of Al and from 10 ppm to 100 ppm of Ti.

28. (Original) The physical vapor deposition target of claim 21 consisting of Al and from 10 ppm to 100 ppm of Hf.

Claims 29-31 (Cancelled).

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32. (Previously presented) A physical vapor deposition target made by a process including casting, consisting essentially of:

aluminum; and

less than or equal to 1000 ppm of one or more dopant materials comprising elements selected from the group consisting of Ac, Ag, As, B, Ba, Be, Bi, C, Ca, Cd, Ce, Co, Cr, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Ho, In, Ir, La, Lu, Mg, Mn, Mo, N, Nb, Nd, Ni, O, Os, P, Pb, Pd, Pm, Po, Pr, Pt, Pu, Ra, Rf, Rh, Ru, S, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Te, Ti, Tl, Tm, V, W, Y, Yb, Zn and Zr, the physical vapor deposition target having an average grain size of less than 100 microns.

33. (Previously presented) The physical vapor deposition target of claim 32 having a size of greater than or equal to $860 \times 910 \times 19 \text{ mm}^3$.

34. (Previously presented) The physical vapor deposition target of claim 32 wherein the physical vapor deposition target is monolithic.

35. (Previously presented). A physical vapor deposition target made by a process including casting and equal channel angular extrusion, the target comprising:

aluminum having an atomic purity of at least 99.99%; and

at least one element selected from the group consisting of Ti, Ta, W, Sc, Co, Mo, and Hf.

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36. (Previously presented). The physical vapor deposition target of claim 35 wherein the total amount of the at least one element comprised by the target is from greater than 0 ppm to less than 1000 ppm.

37. (Previously presented). The physical vapor deposition target of claim 35 wherein the target consists essentially of the aluminum and the at least one element.

38. (Previously presented). The physical vapor deposition target of claim 35, wherein the group is a first group, and further comprising at least one element selected from a second group consisting of Ac, Ag, As, B, Ba, Be, Bi, C, Ca, Cd, Ce, Cr, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Ho, In, Ir, La, Lu, Mg, Mn, N, Nb, Nd, Ni, O, Os, P, Pb, Pd, Pm, Po, Pr, Pt, Pu, Ra, Rf, Rh, Ru, S, Sb, Se, Si, Sm, Sn, Sr, Tb, Te, Tl, Tm, V, Y, Yb, Zn and Zr.

39. (Previously presented). The physical vapor deposition target of claim 38 wherein the target consists essentially of the aluminum and a total amount of elements selected from the first and second groups, the total amount being greater than 0 ppm and less than 1000 ppm.

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40. (Previously presented). A physical vapor deposition target made by a process including casting, consisting essentially of:

aluminum; and

less than or equal to 1000 ppm of elements selected from the group consisting of Ac, Ag, As, B, Ba, Be, Bi, C, Ca, Cd, Ce, Co, Cr, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Ho, In, Ir, La, Lu, Mg, Mn, Mo, N, Nb, Nd, Ni, O, Os, P, Pb, Pd, Pm, Po, Pr, Pt, Pu, Ra, Rf, Rh, Ru, S, Sb, Se, Si, Sm, Sn, Sr, Ta, Tb, Te, Ti, Tl, Tm, V, W, Y, Yb, Zn and Zr, the physical vapor deposition target having an average grain size of less than 100 microns.

41. (Previously presented). The physical vapor deposition target of claim 40 wherein the aluminum has a purity of at least 99.99 atomic percent.

42. (Presently amended). A physical vapor deposition target consisting essentially of:

aluminum having a purity of at least 99.99 atomic percent; and

less than or equal to 1000 ppm of one or more dopant materials comprising elements selected from the group consisting of Ac, Ag, As, B, Ba, Be, Bi, C, Ca, Cd, Ce, Co, Cr, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Ho, In, Ir, La, Lu, Mg, Mn, Mo, N, Nb, Nd, Ni, O, Os, P, Pb, Pd, Pm, Po, Pr, Pt, Pu, Ra, Rf, Rh, Ru, S, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Te, Ti, Tl, Tm, V, W, Y, Yb, Zn and Zr; the physical vapor deposition target having an average grain size of at least 20 microns and less than 100 microns.

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43. (Previously presented). The physical vapor deposition target of claim 42 wherein the aluminum has a purity of at least 99.995 atomic percent.

44. (Previously presented). The physical vapor deposition target of claim 42 having less than or equal to 100 ppm of the one or more dopant materials.

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